

**Attachment D**

**Applicable Requirements for facilities subject to 40 CFR 60.630 (Subpart KKK) Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants**

Component Type	Type of Service	Monitoring and Testing [Referenced Standard]	Alternatives and Exemptions from Monitoring and Testing [Referenced Standard]	Recordkeeping and Reporting [Referenced Standard]	Alternatives and Exemptions from Recordkeeping and Reporting [Referenced Standard]
<b>Facilities that were Constructed, Reconstructed or Modified on or before January 20, 1984:</b>					
Any.	Any.	None.	<i>Exemption</i> [40 CFR 60.630(b)]	None.	<i>Exemption</i> [40 CFR 60.630(b)]
<b>Facilities that were Constructed, Reconstructed or Modified after January 20, 1984:</b>					
Any Component in Vacuum Service.	Vacuum Service.	None.	<i>Exemption</i> [40 CFR 60.482-1(d)]	A list of identification numbers for equipment in vacuum service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(e)(5)]	None.
Any Component in Non-VOC Service.	Non-VOC Service.	Equipment must be tested (using general methods ASTM E-260, E-168, E169) to demonstrate that the percent VOC content of the process fluid can be reasonably expected never to exceed 10 percent by weight. [40 CFR 60.632(f)]	Not Applicable.	Information and data used to demonstrate that equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(i) and (j)]	Not Applicable.
Pump.	Light Liquid Service. [40 CFR 60.485(e)]	1. Monitor (as described in 40 CFR 60.485(b)) monthly for leaks. [40 CFR 60.482-2(a)(1)]  2. Visually inspect weekly for liquid dripping from pump seal. [40 CFR 60.482-2(a)(2)]	<i>Alternative</i> Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]  <i>Exemptions</i> -pumps with dual mechanical seal systems and barrier fluid system. [40 CFR 60.482-2(d)] -pumps designated for no detectable emissions. [40 CFR 60.482-2(e)] -pumps equipped with closed vent systems. [40 CFR 60.482-2(f)] -equipment at nonfractionating plant with design capacity less than 10 mmscfd. [40 CFR 60.633(d)]	<b>Recordkeeping</b> 40 CFR 60.486(b)(1), (3), (c)(1) through (9), (e)(1),(2), and (4), and (h)  <b>Reporting</b> 40 CFR 60.487(a), (b)(1) and (3), (c)(1), (2)(iii), (iv) and (vii), (3), (4), (e) and (f)	None.

Component Type	Type of Service	Monitoring and Testing [Referenced Standard]	Alternatives and Exemptions from Monitoring and Testing [Referenced Standard]	Recordkeeping and Reporting [Referenced Standard]	Alternatives and Exemptions from Recordkeeping and Reporting [Referenced Standard]
Pump. (continued)	Heavy Liquid Service. [40 CFR 60.633(h)(1)]	Monitor (as described in 40 CFR 60.485(b)) within 5 days if evidence of a potential leak is found. [40 CFR 60.482-8(a)]	<i>Alternative</i> Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]	<b>Recordkeeping</b> 40 CFR 60.486(b)(1), (3), (c)(1) through (9), (e)(1)  <b>Reporting</b> 40 CFR 60.487(a), (b)(1), (c)(1), (3), (e) and (f)	None.
Compressor.	Wet Gas Service. [40 CFR 60.631]	None.	<i>Alternative</i> Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]  <i>Exemption</i> [40 CFR 60.633(f)]	<b>Recordkeeping</b> - Information and data used to demonstrate that equipment is in wet gas service and not in VOC service shall be kept in a readily accessible location. [40 CFR 60.635 (c) and 60.486 (j)] - 40 CFR 60.635(c); 40 CFR 60.486(b)(1), (3), (c)(1) through (9), (e)(1),(2), and (4)  <b>Reporting</b> 40 CFR 60.487(a), (b)(1), (4), (c)(1), (2)(v), (vi), (vii), (3) and (4), (e) and (f)	Not Applicable.
	VOC Service. [40 CFR 60.481]	1. Equip with a seal system that includes a barrier fluid system and a sensor. [40 CFR 60.482-3(a)-(d)]  2. Check sensor daily or equip with an audible alarm. [40 CFR 60.482-3(e)(1)]	<i>Alternative</i> Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]  <i>Exemptions</i> -from requirements 1. & 2. (a) Equip with a closed vent system. [40 CFR 60.482-3(h)] (b) Compressors designated for no detectable emissions. [40 CFR 60.482-3(i)]  - Compressors becoming affected facilities under 40 CFR 60.14 (Modification) or 40 CFR 60.15 (Reconstruction). [40 CFR 60.482-3(j)]	<b>Recordkeeping</b> 40 CFR 60.635(c); 40 CFR 60.486(b)(1), (3), (c)(1) through (9), (e)(1),(2), and (4), (h) and (j)  <b>Reporting</b> 40 CFR 60.487(a), (b)(1), (4), (c)(1), (2)(v), (vi), (vii), (3) and (4), (e) and (f)	None.

Component Type	Type of Service	Monitoring and Testing [Referenced Standard]	Alternatives and Exemptions from Monitoring and Testing [Referenced Standard]	Recordkeeping and Reporting [Referenced Standard]	Alternatives and Exemptions from Recordkeeping and Reporting [Referenced Standard]
Pressure Relief Device.	Gas/Vapor Service. [40 CFR 60.481]	<p>1. Operate with no detectable emissions (detected as described in 40 CFR 60.485(c)) except for pressure releases. [40 CFR 60.482-4(a)]</p> <p>2. Monitor (as described in 40 CFR 60.485(b)) quarterly and within five days of a pressure release. [40 CFR 60.633(b)(1)]</p>	<p><i>Alternative</i> Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]</p> <p><i>Exemptions</i> -from requirements 1. &amp; 2. Equip with a closed vent system [40 CFR 60.482-4(c)]</p> <p>-from requirement 2. Pressure Relief Devices located at nonfractionating plants. [40 CFR 60.633(b)(4)]</p> <p>- Pressure Relief Devices located at nonfractionating plants with design capacity less than 10 mmscfd. [40 CFR 60.633(d)]</p>	<p><b>Recordkeeping</b> 40 CFR 60.635; 40 CFR 60.486(e)(3) and (4)</p> <p><b>Reporting</b> 40 CFR 60.636; 40 CFR 60.487(a), (b)(1), (c)(1), (2)(vii), (3), (4), (e) and (f)</p>	None.
	Light or Heavy Liquid Service. [40 CFR 60.633(h)]	Monitor (as described in 40 CFR 60.485(b)) within 5 days if evidence of a potential leak is found. [40 CFR 60.482-8(a)]	<p><i>Alternative</i> Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]</p>	<p><b>Recordkeeping</b> 40 CFR 60.486(b)(1), (3), (c)(1) through (9)</p> <p><b>Reporting</b> 40 CFR 60.487(a), (b)(1), (c)(1), (3), (e) and (f)</p>	None.
Sampling Connection.	Any Service.	None.	<i>Exemption</i> [40 CFR 60.633(c)]	None.	<i>Exemption</i> [40 CFR 60.633(c)]
Open-Ended Valve or Line. [40 CFR 60.481]	Any Service.	Equip with a cap, blind flange, plug or a second valve. [40 CFR 60.482-6]	<p><i>Alternative</i> Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]</p>	<p><b>Recordkeeping</b> 40 CFR 60.486(e)(1)</p> <p><b>Reporting</b> 40 CFR 60.487(a), (b)(1), (c)(1), (3), (e) and (f)</p>	None.

Component Type	Type of Service	Monitoring and Testing [Referenced Standard]	Alternatives and Exemptions from Monitoring and Testing [Referenced Standard]	Recordkeeping and Reporting [Referenced Standard]	Alternatives and Exemptions from Recordkeeping and Reporting [Referenced Standard]
Valve.	Gas/Vapor [40 CFR 60.481] or Light Liquid Service. [40 CFR 60.633(h)(2)]	1. Monitor (as described in 40 CFR 60.485(b)) monthly. [40 CFR 60.482-7]	<p><i>Alternative</i>            -from requirement 1. a) Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]            b) Comply with an allowable percentage of valves leaking. [40 CFR 60.483-1]            c) Comply with skip period leak detection. [40 CFR 60.483-2]</p> <p><i>Exemptions</i>            -from requirement 1. a) Valves with no external actuating mechanism in contact with the process fluid designated for no detectable emissions (as described in 40 CFR 60.486(e)(2)) monitor initially and annually. [40 CFR 60.482-7(f)]            b) Valves designated as unsafe-to-monitor (as described in 40 CFR 60.486(f)(1)) monitor as frequently as practicable. [40 CFR 60.482-7(g)]            c) Valves designated as difficult-to-monitor (as described in 40 CFR 60.486(f)(2)) monitor at least annually. [40 CFR 60.482-7(h)]            d) Valves at a nonfractionating plant with design capacity less than 10 mm scfd. [40 CFR 60.633(d)]</p>	<p><b>Recordkeeping</b>            40 CFR 60.486(b)(1), (2), (c)(1) through (9), (e)(1),(2), and (4), (f) and (g)</p> <p><b>Reporting</b>            40 CFR 60.487(a), (b)(1) and (2), (c)(1), (2)(i), (ii) and (vii), (3), (4), (d), (e) and (f)</p>	None.
	Heavy Liquid Service. [40 CFR 60.633(h)(1)]	Monitor (as described in 40 CFR 60.485(b)) within 5 days if evidence of a potential leak is found. [40 CFR 60.482-8(a)]	<p><i>Alternative</i>            Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]</p>	<p><b>Recordkeeping</b>            40 CFR 60.486(b)(1), (2), (c)(1) through (9), and (e)(1)</p> <p><b>Reporting</b>            40 CFR 60.487(a), (b)(1), (c)(1), (2)(i), (3), (e) and (f)</p>	None.

Component Type	Type of Service	Monitoring and Testing [Referenced Standard]	Alternatives and Exemptions from Monitoring and Testing [Referenced Standard]	Recordkeeping and Reporting [Referenced Standard]	Alternatives and Exemptions from Recordkeeping and Reporting [Referenced Standard]
Flanges and Other Connectors. [40 CFR 60.481]	Any Service.	Monitor (as described in 40 CFR 60.485(b)) within 5 days if evidence of a potential leak is found. [40 CFR 60.482-8(a)]	<i>Alternative</i> Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]	<b>Recordkeeping</b> 40 CFR 60.486(b)(1), (3), (c)(1) through (9), and (e)(1)  <b>Reporting</b> 40 CFR 60.487(a), (b)(1), (c)(1), (3), (e) and (f)	None.
Closed Vent Systems with a Flare. [40 CFR 60.481]	Any Service.	1. Flares used to comply with the provisions of Subpart KKK shall comply with the requirements of 40 CFR 60.18. [40 CFR 60.633(g)]  2. Vapor Collection or Closed Vent System: a. Hard-piped: initial inspection (according to 40 CFR 60.485(b)) and annual visual inspections for leaks. [40 CFR 60.482-10(f)(1)] b. Ductwork: initial and annual inspections (according to 40 CFR 60.485(b)). [40 CFR 60.482-10(f)(2)]  3. Closed Vent Systems and control devices used to comply with the provisions of Subpart KKK or VV shall be operated at all times when emissions may be vented to them. [40 CFR 60.482-10(m)]	<i>Alternative</i> Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)]  <i>Exemptions</i> -from requirement 2. a. Vapor Collection or Closed Vent System operated under vacuum. [40 CFR 60.482-10(i)] b. Closed Vent System designated as unsafe to inspect. [40 CFR 60.482-10(j)] c. Closed Vent System designated as difficult to inspect. [40 CFR 60.482-10(k)]	<b>Recordkeeping</b> - 40 CFR 60.482-10(l)(3) through (5) - 40 CFR 60.486(c), (d)(1) through (5), and (e)(1)  <b>Reporting</b> 40 CFR 60.487(a), (b)(1), (c)(1), (2)(vii), (3), (e) and (f)	<i>Exemptions</i> -from requirement 2. b. Identify equipment designated as unsafe to inspect, explain why it is so designated and plan for inspection. [40 CFR 60.482-10(l)(1)] c. Identify equipment designated as difficult to inspect, explain why it is so designated and plan for inspection. [40 CFR 60.482-10(l)(2)]
Closed Vent Systems with control device other than Flare. [40 CFR 60.481]	Any Service.	1. Vapor Recovery Systems and Enclosed Combustion Devices used to comply with the provisions of Subpart VV shall be monitored to ensure that they are operated and maintained with 95 percent efficiency. [40 CFR 60.482-10(b) and (c)]  2. Closed Vent Systems and control devices used to comply with the provisions of Subpart KKK or VV shall be operated at all times when emissions may be vented to them. [40 CFR 60.482-10(m)]	<i>Alternative</i> - Request an alternative means of emission limitation [40 CFR 60.632(c) and 60.482-1(c)] - Enclosed Combustion Devices used to comply with the provisions of Subpart VV shall be monitored to ensure that they provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C. [40 CFR 60.482-10(c)] <i>Exemptions</i> - a. Vapor Collection or Closed Vent System operated under vacuum. [40 CFR 60.482-10(i)] b. Closed Vent System designated as unsafe to inspect. [40 CFR 60.482-10(j)] c. Closed Vent System designated as difficult to inspect. [40 CFR 60.482-10(k)]	<b>Recordkeeping</b> - 40 CFR 60.482-10(l)(3) through (5) - 40 CFR 60.486(c), (d)(1) through (5), and (e)(1)  <b>Reporting</b> 40 CFR 60.487(a), (b)(1), (c)(1), (2)(vii), (3), (e) and (f)	<i>Exemptions</i> - a. Identify equipment designated as unsafe to inspect, explain why it is so designated and plan for inspection. [40 CFR 60.482-10(l)(1)] b. Identify equipment designated as difficult to inspect, explain why it is so designated and plan for inspection. [40 CFR 60.482-10(l)(2)]